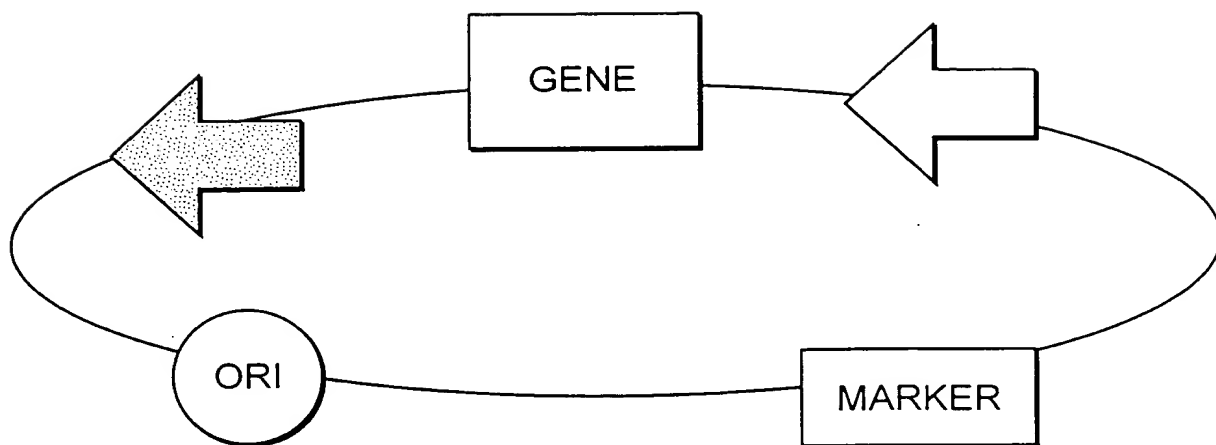


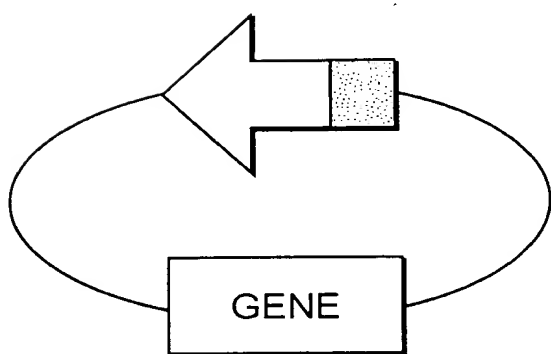
FIG. 1



PLASMID



EXCISION (+ RECOMBINASE)



MINICIRCLE

+

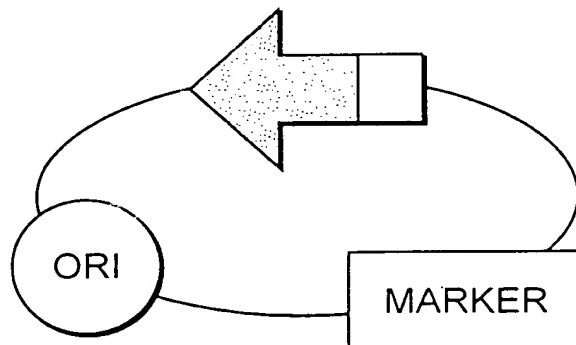


FIG. 2

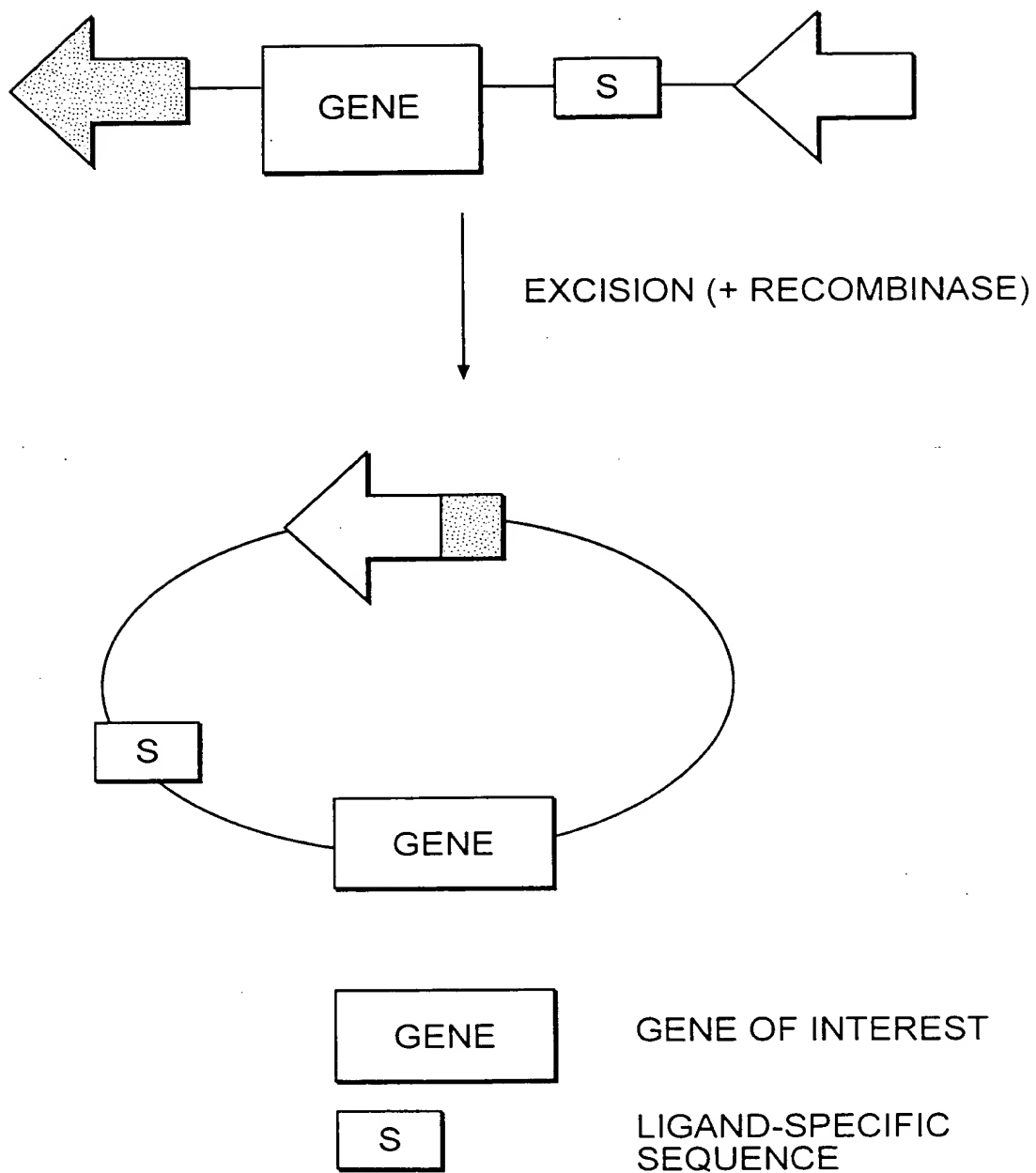


FIG. 3

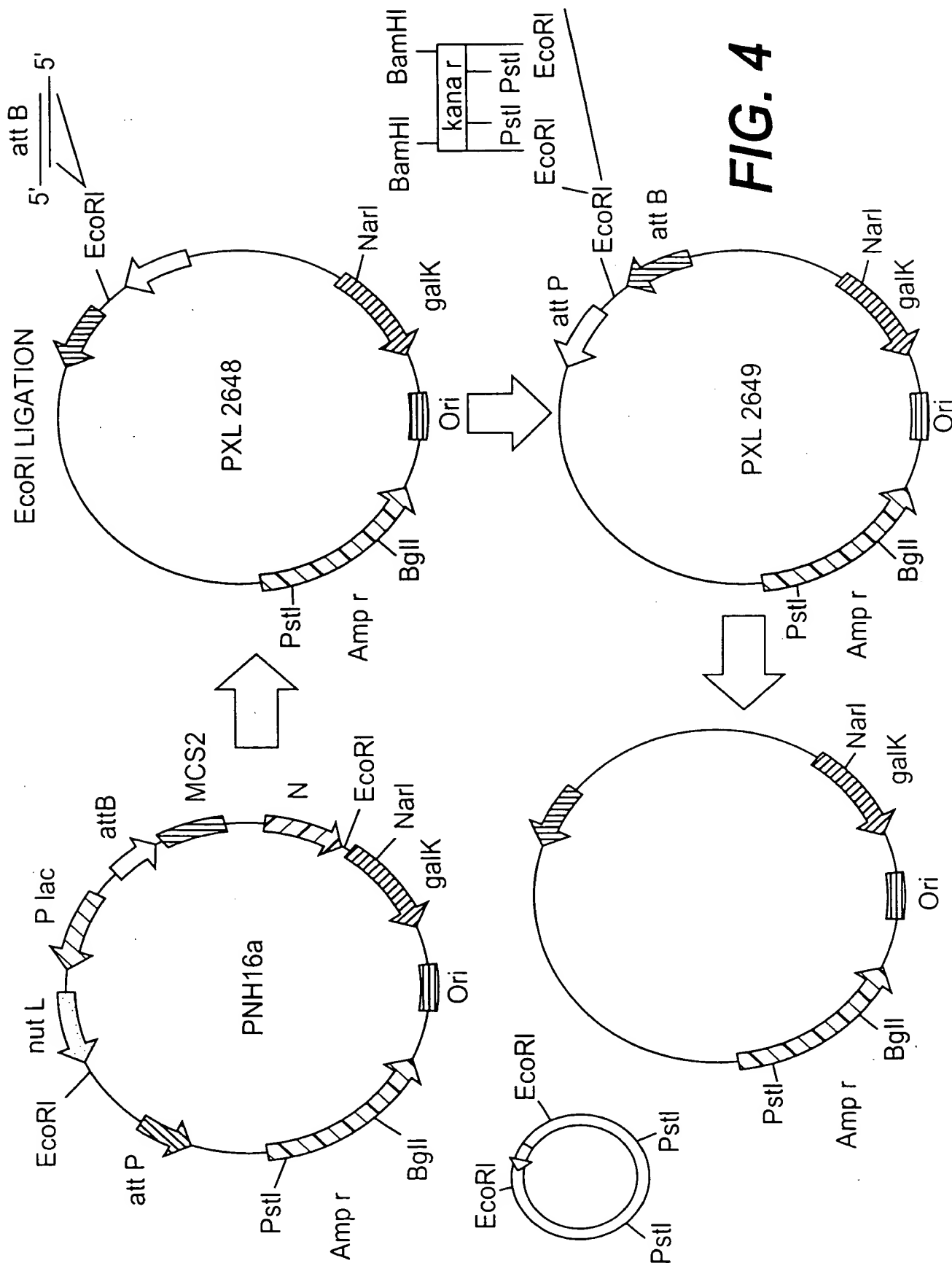
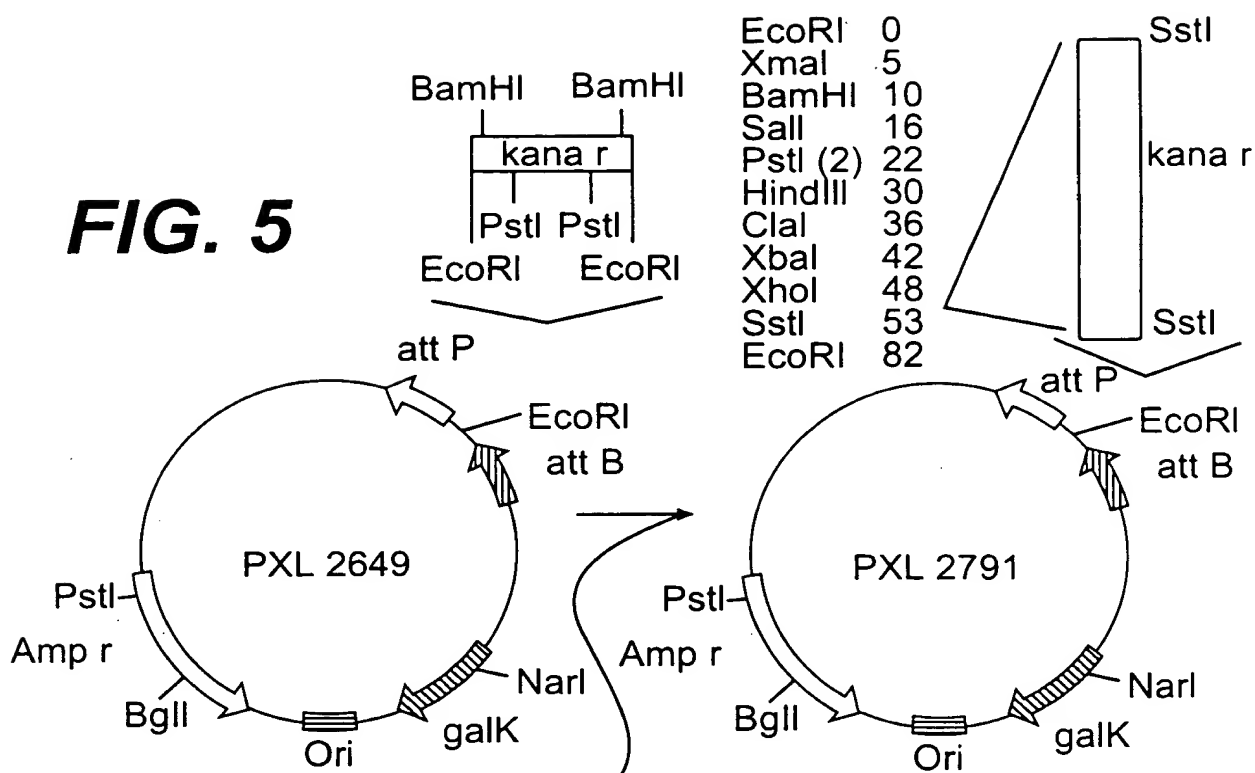


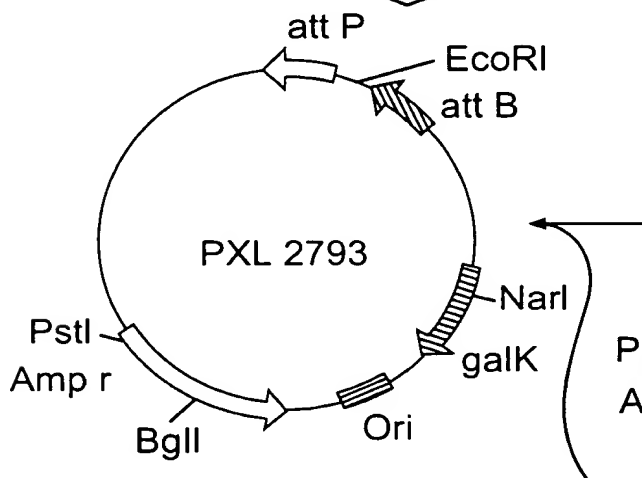
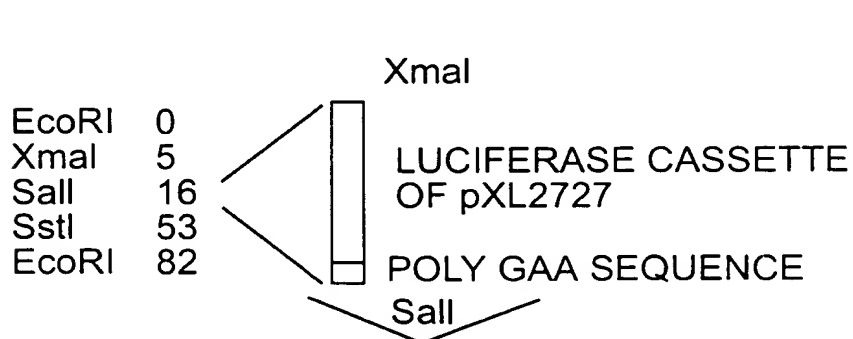
FIG. 4

FIG. 5



1- EcoRI DIGESTION OF pXL2649
2-CLONING OF THE EcoRI FRAGMENT
OF PLASMID pXL1571 SET

DIGESTION OF PLASMID
pXL2791 WITH SstI



1-DIGESTION OF pXL2792 WITH Sall AND XmaI
2- CLONING OF THE Sall-XmaI FRAGMENT OF PLASMID pXL2727

LUCIFERASE ACTIVITY OBTAINED ON NIH
3T3 CELLS

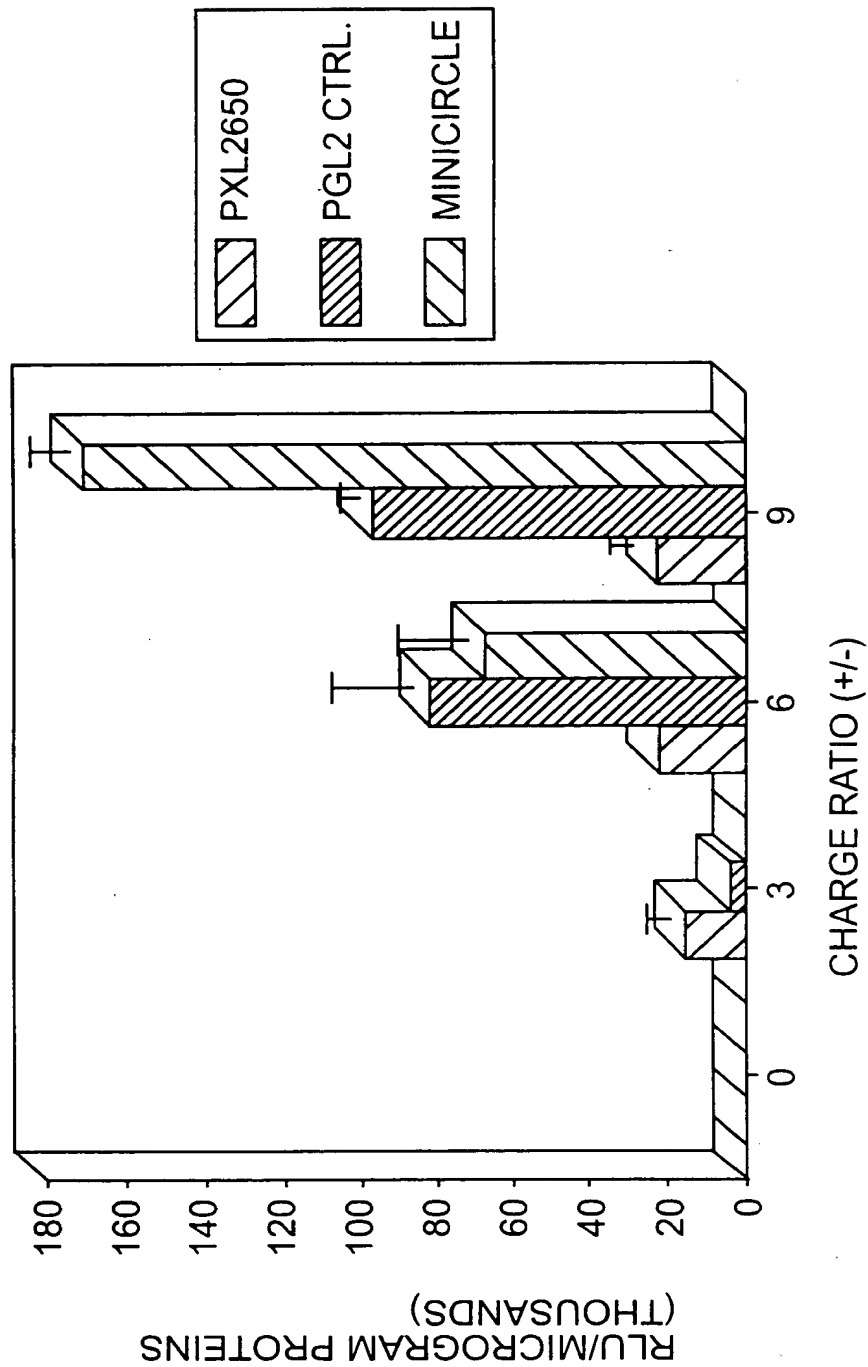


FIG. 6

205020-10011111

- 1 →
- 2 →
- 3 →
- 4 →
- 5 →
- 6 →

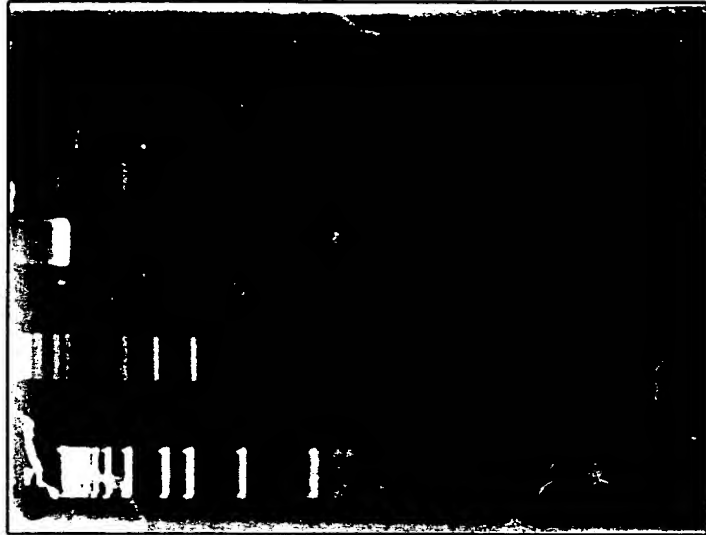


FIG. 7

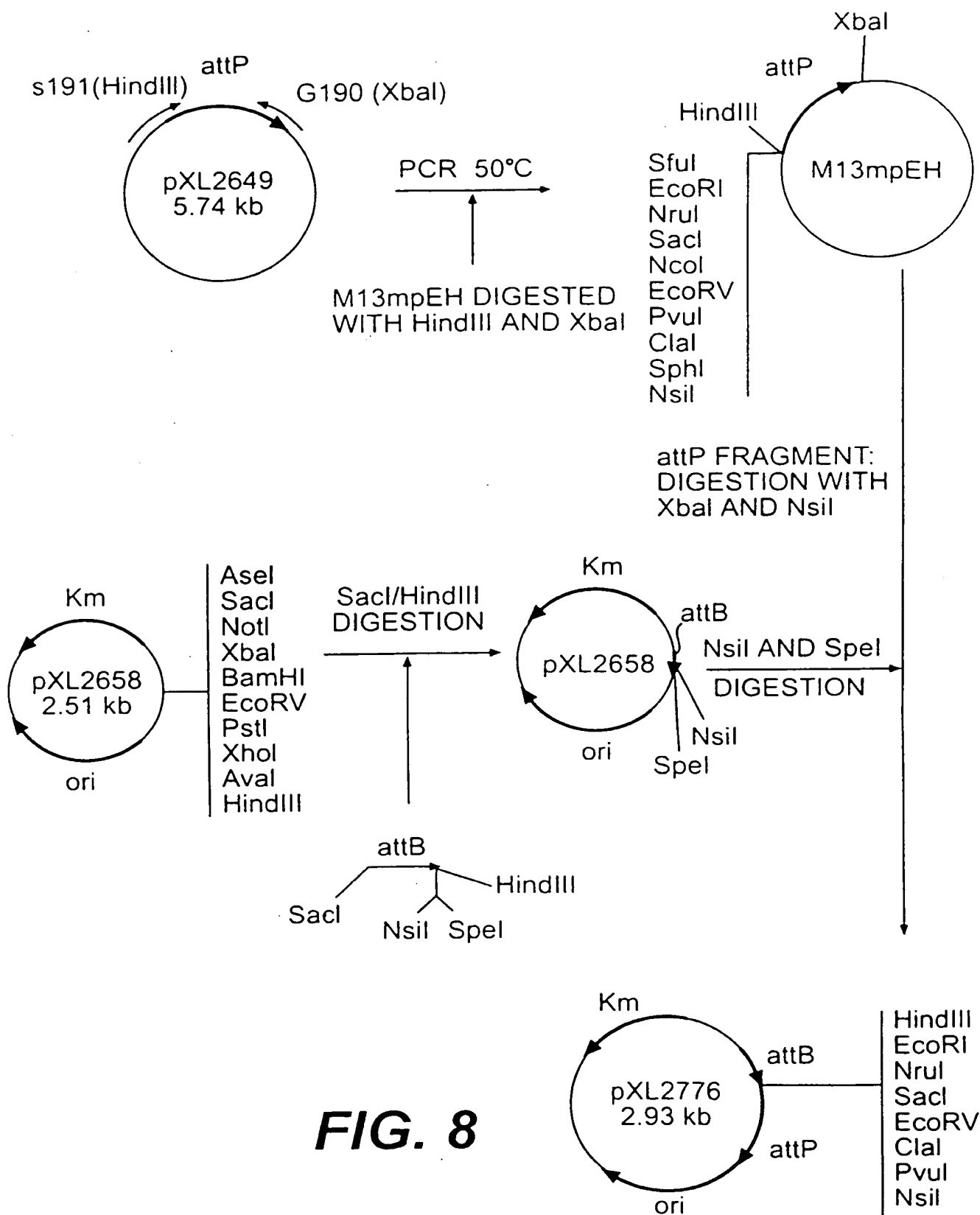


FIG. 8

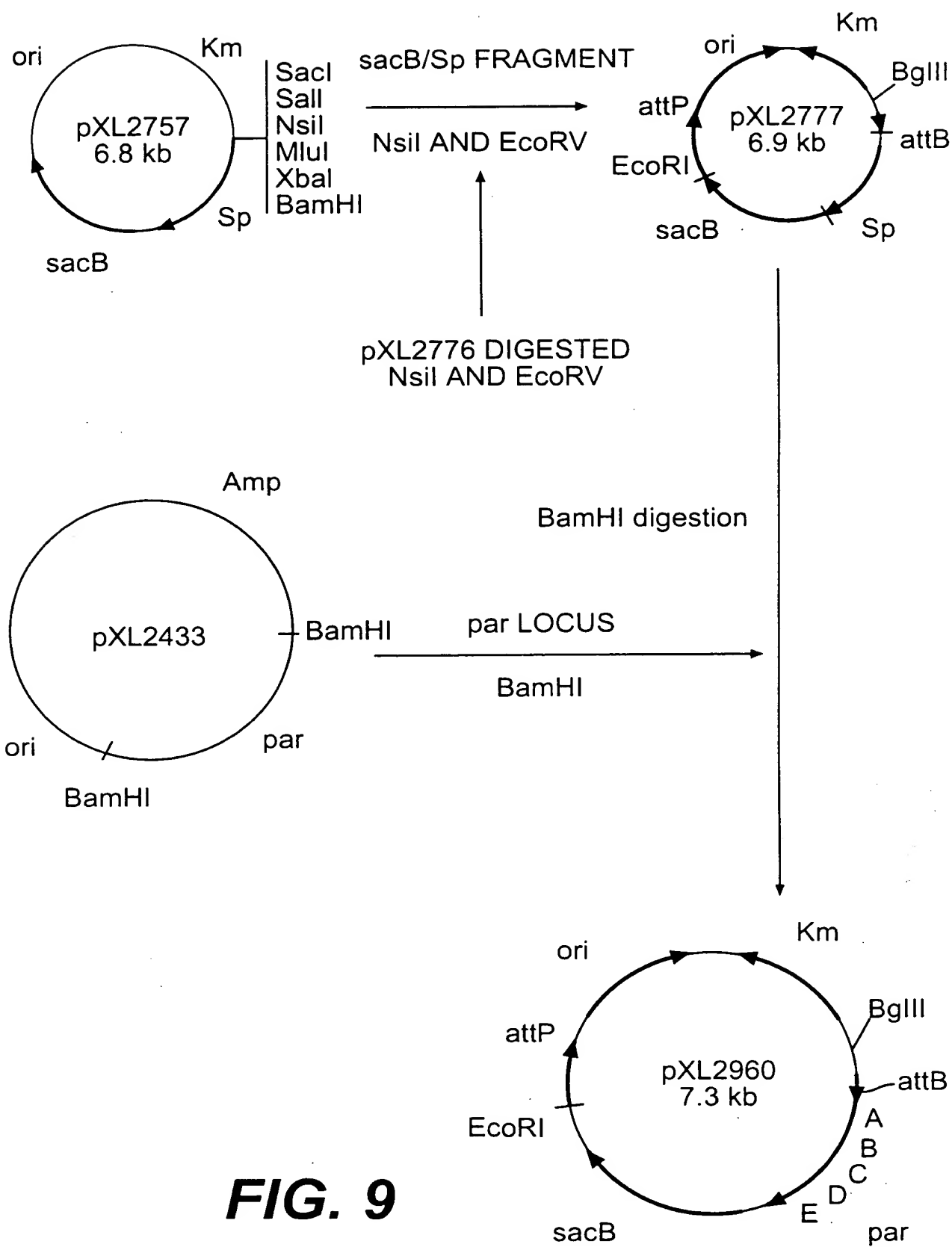


FIG. 9

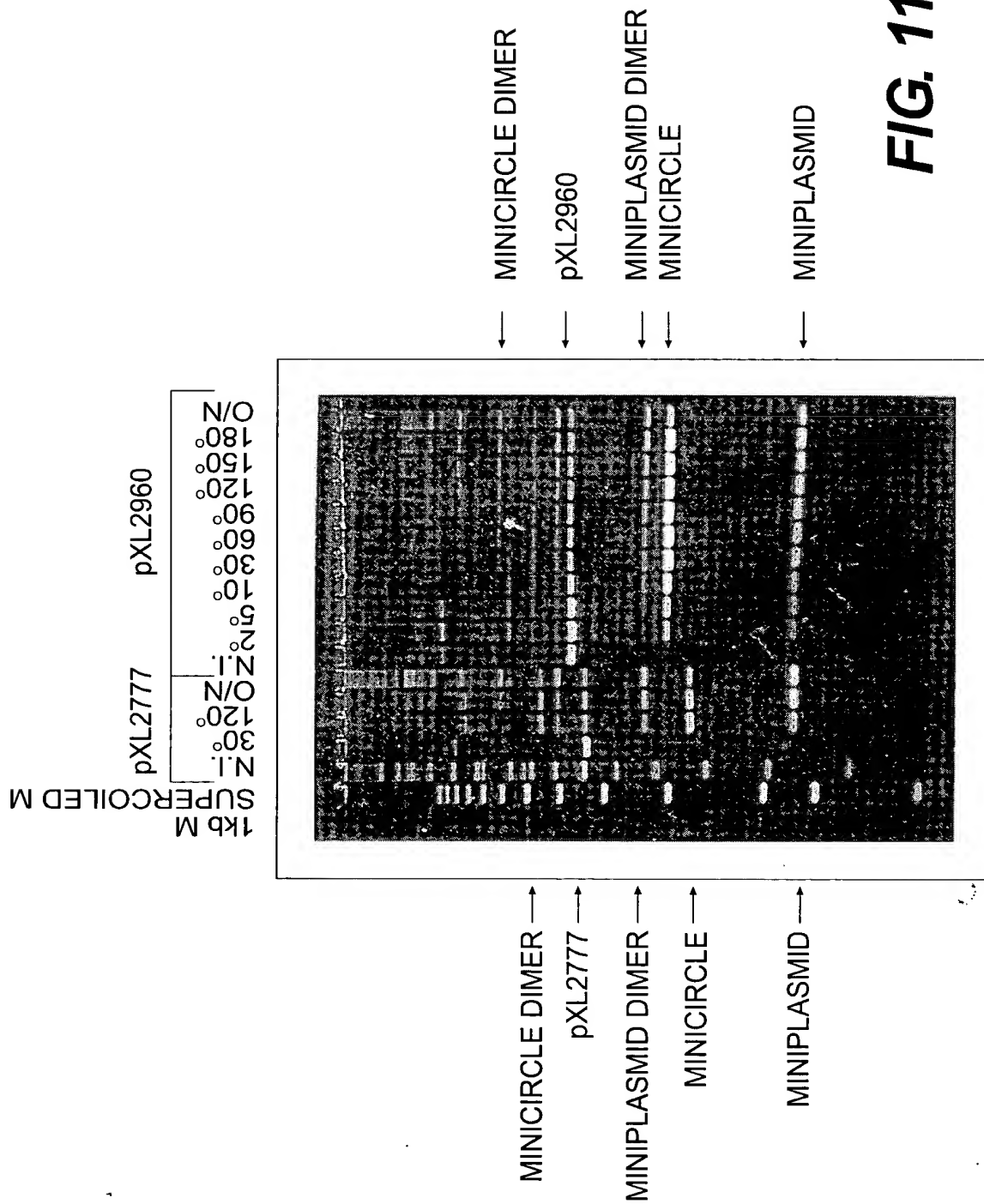


FIG. 11

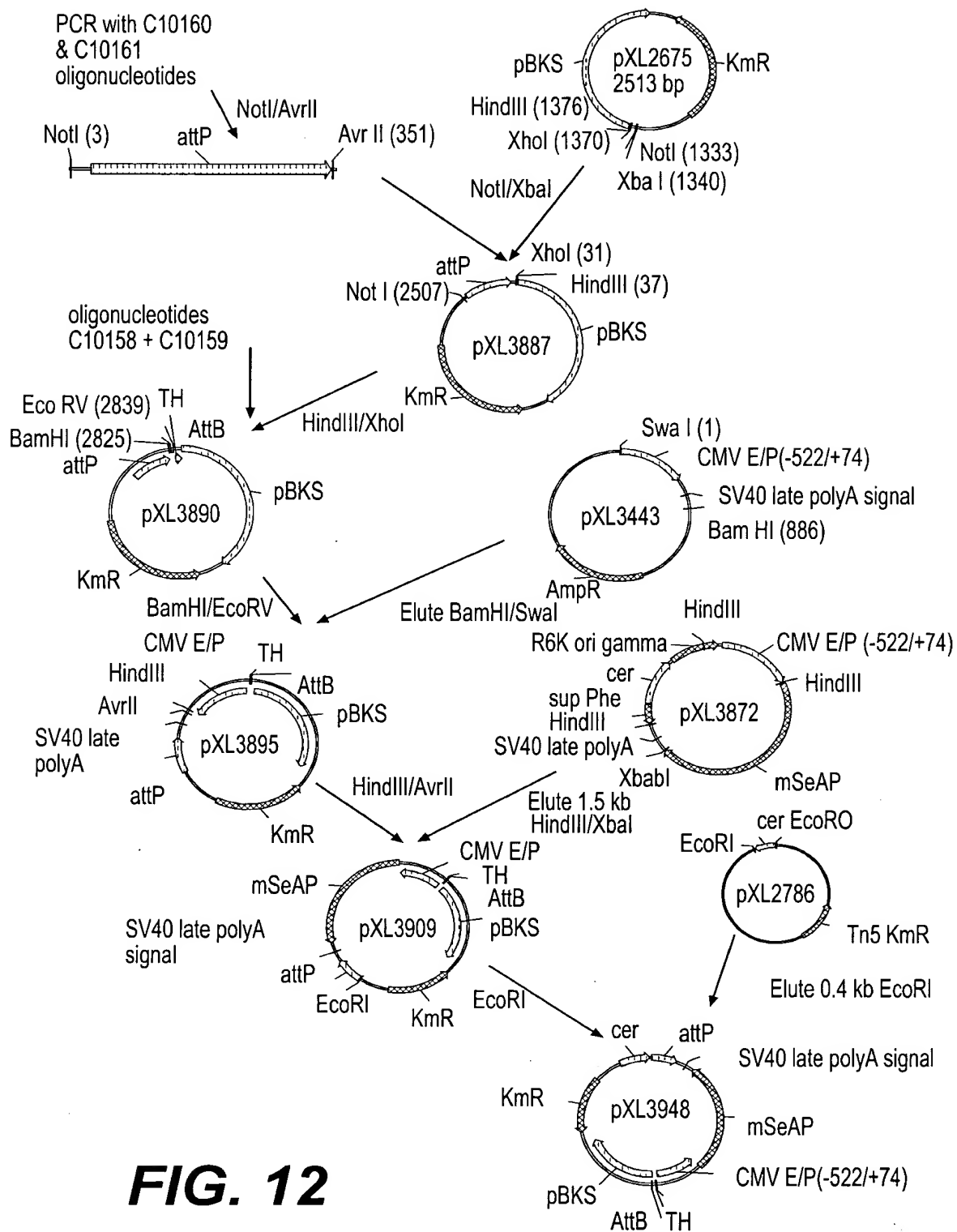
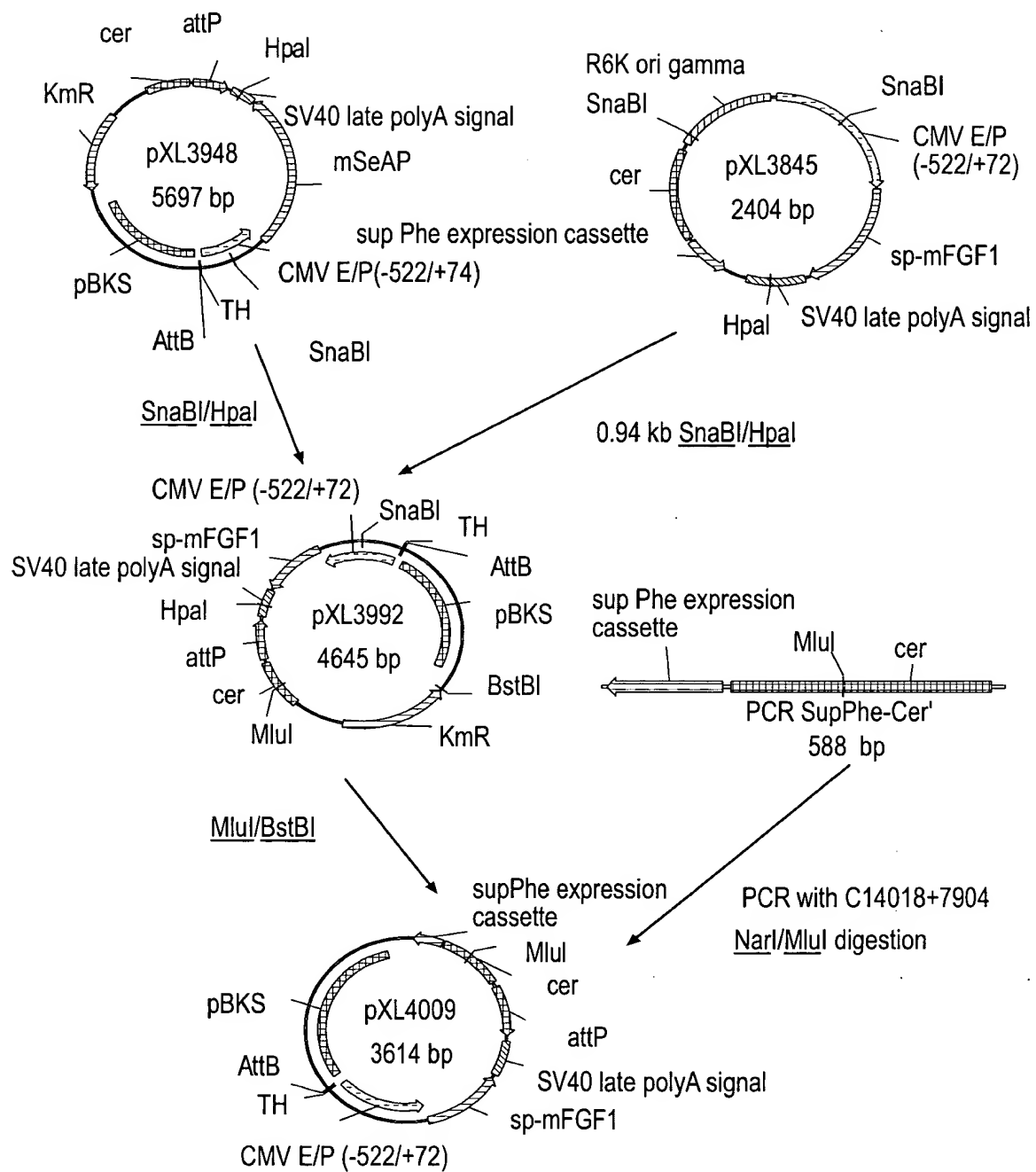
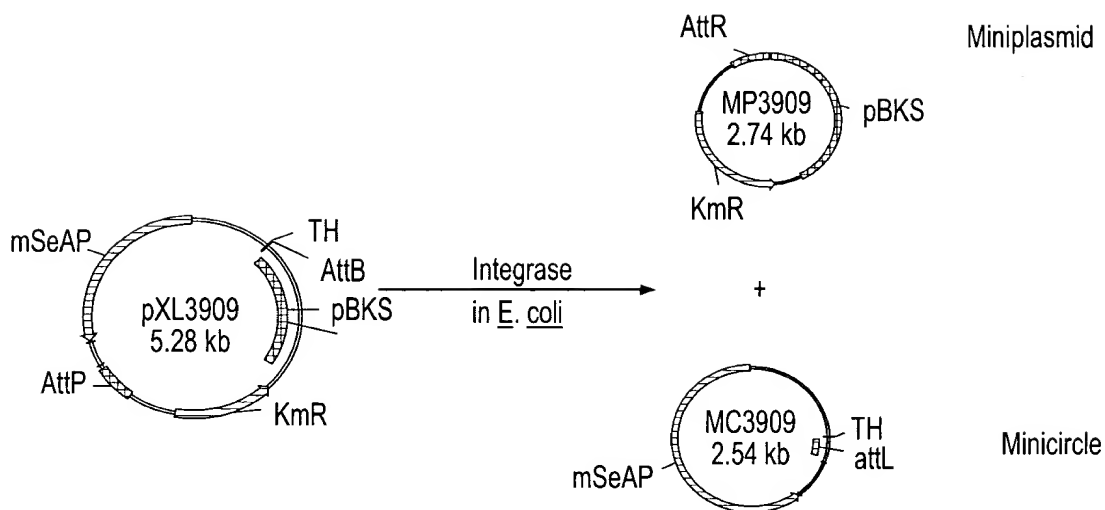


FIG. 12



C14018: 5'-AAAGGCGCCAGCTTAAAAAATCC-3' (SEQ ID NO: 49)
 7904: 5'-CATACGTCATTATTGACGTC-3' (SEQ ID NO: 50)

FIG. 13



TRIPLE HELIX SEQUENCE & attL (119 bp) (SEQ ID NO: 12)

5' - TTCTTTTTTTTCTTGAAGCCTGCTTTTTTATACTAAGTTGGCATTATAAAAAAGCATTGC- 3'
 3' - AAGAAAAAAAGAACTTCGGACGAAAAAATATGATTCAACCGTAATATTTTTTCGTAACG- 5'

5' - TTATCAATTTGTTGCAACGAACAGGTCACATCAGTCAAAATAAAATCATTATTTGATT- 3'
 3' - AATAGTTAAACAACGTTGCTTGTCAGTGATAGTCAGTTTTATTTTAGTAATAAACTAA- 5'

FIG. 14

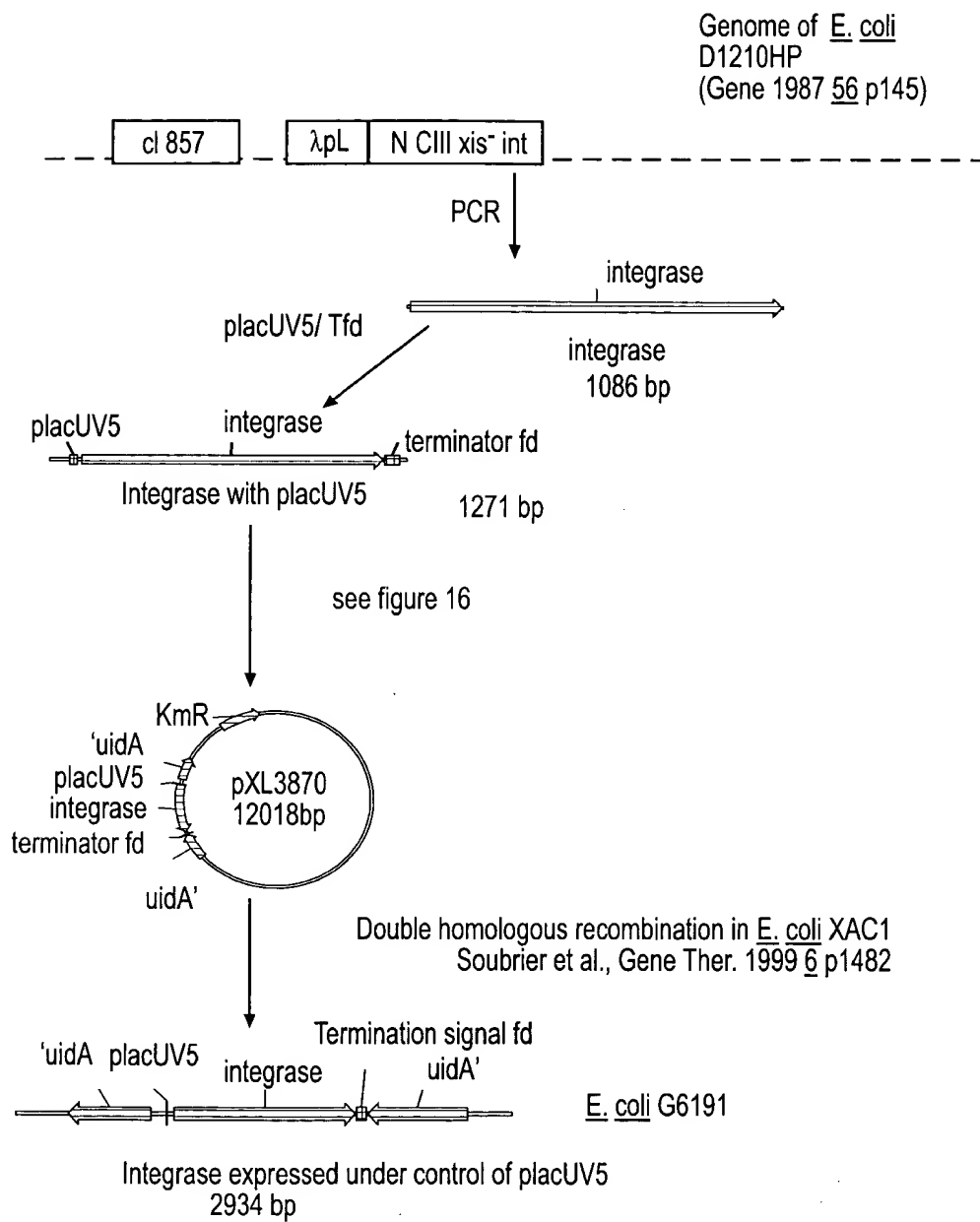


FIG. 15

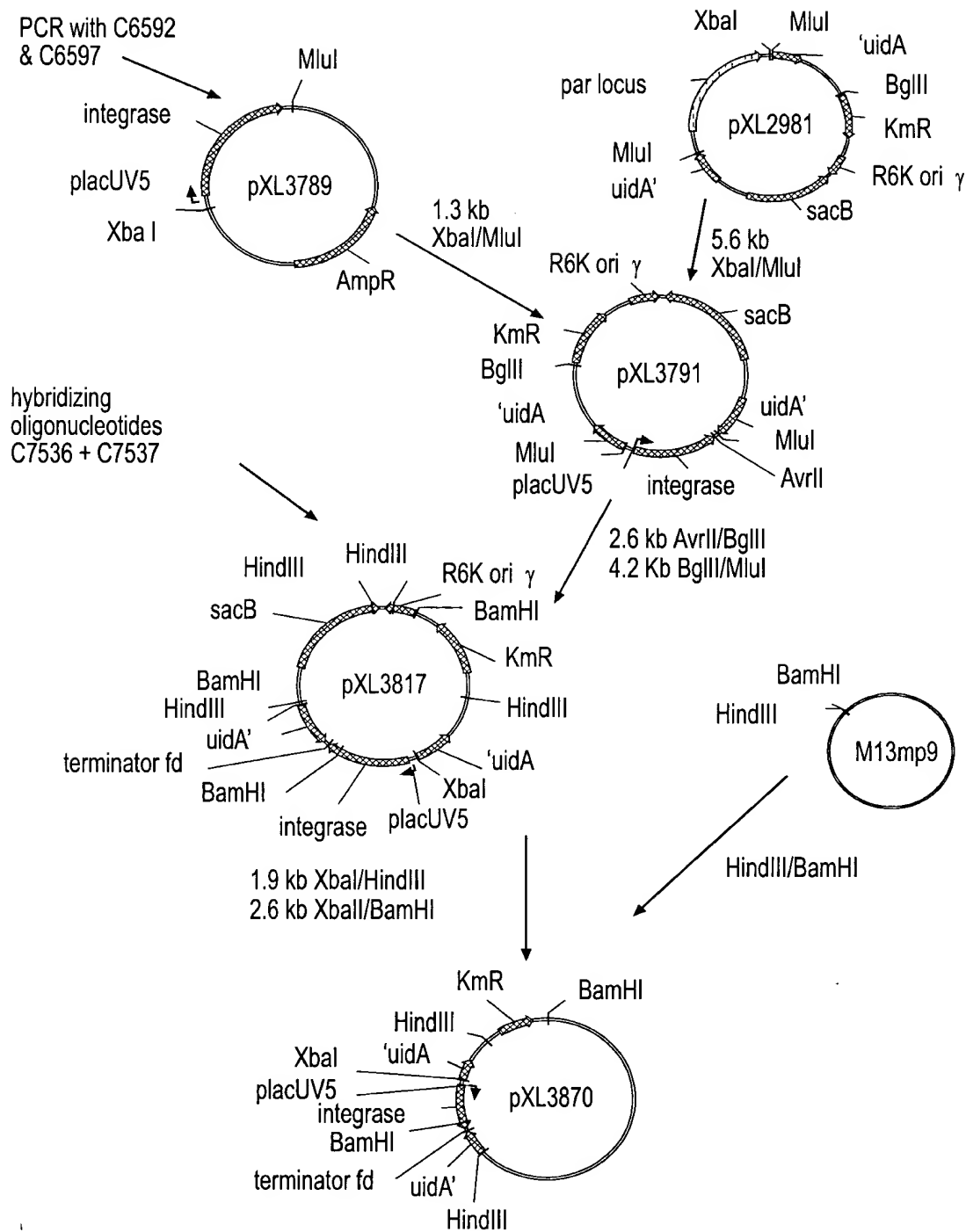
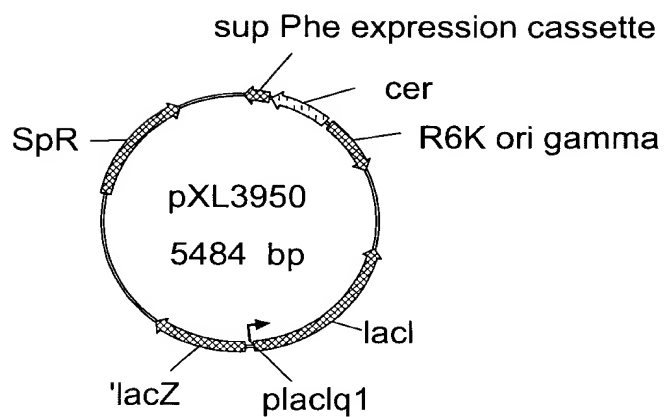


FIG. 16



Transformation in the strain G6191
Selection with spectinomycin

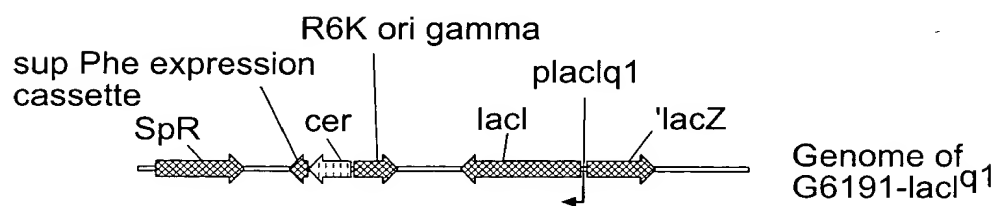


FIG. 17

205220-205220

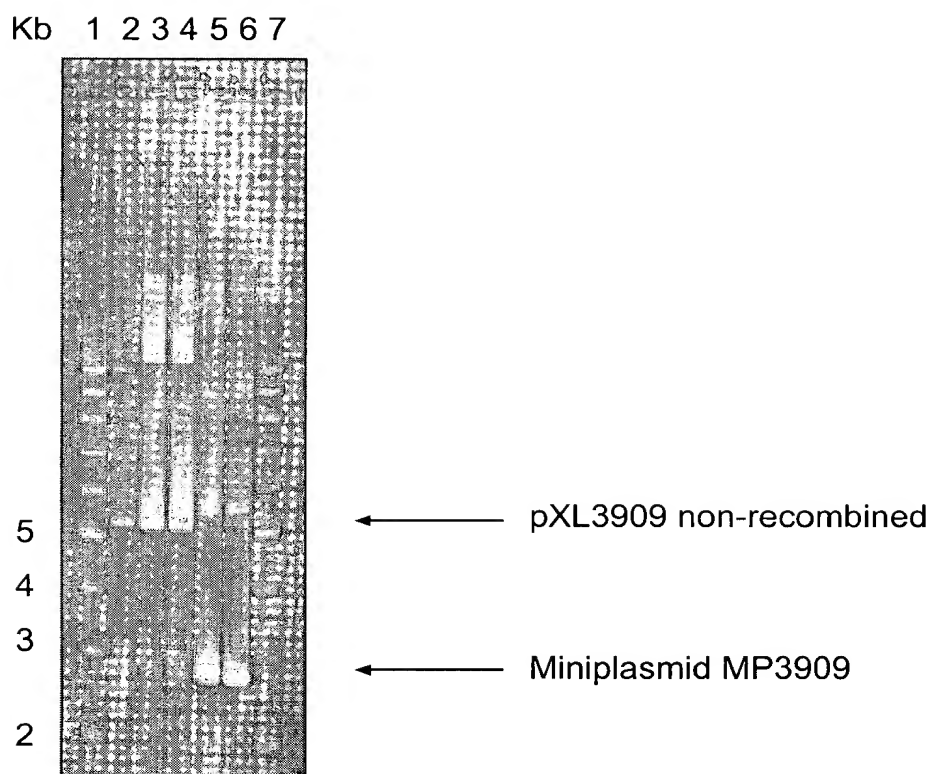


FIG. 18

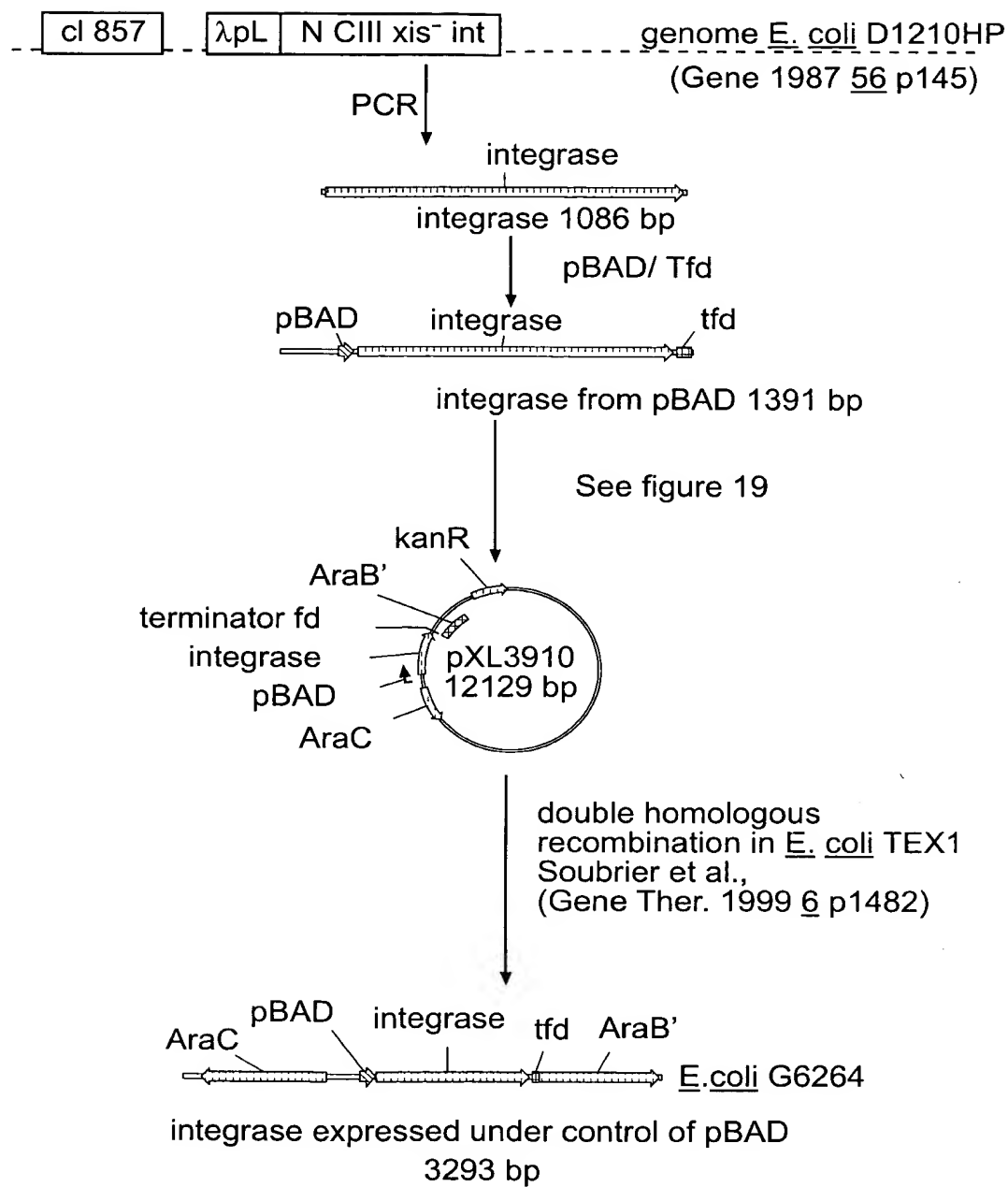


FIG. 19

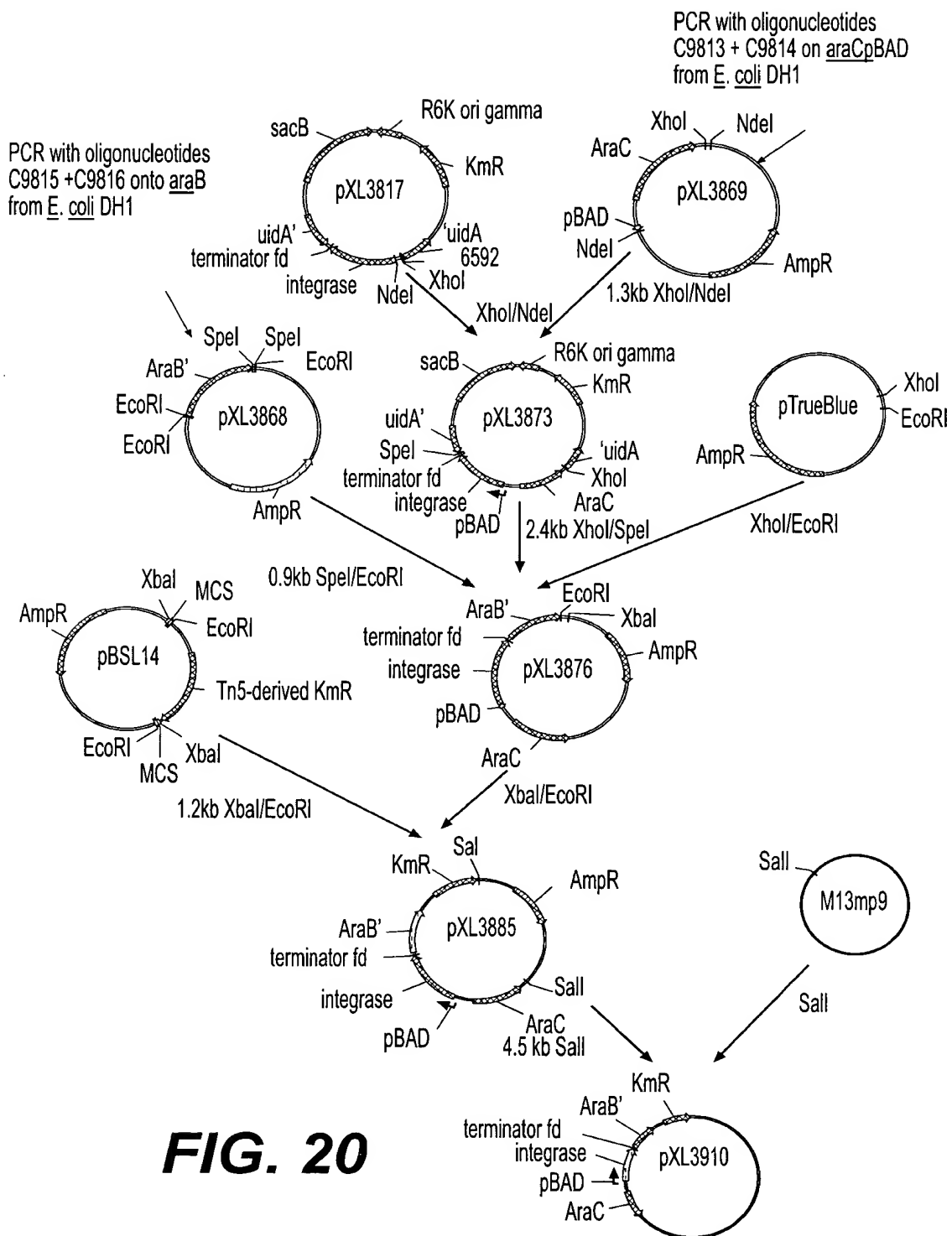


FIG. 20

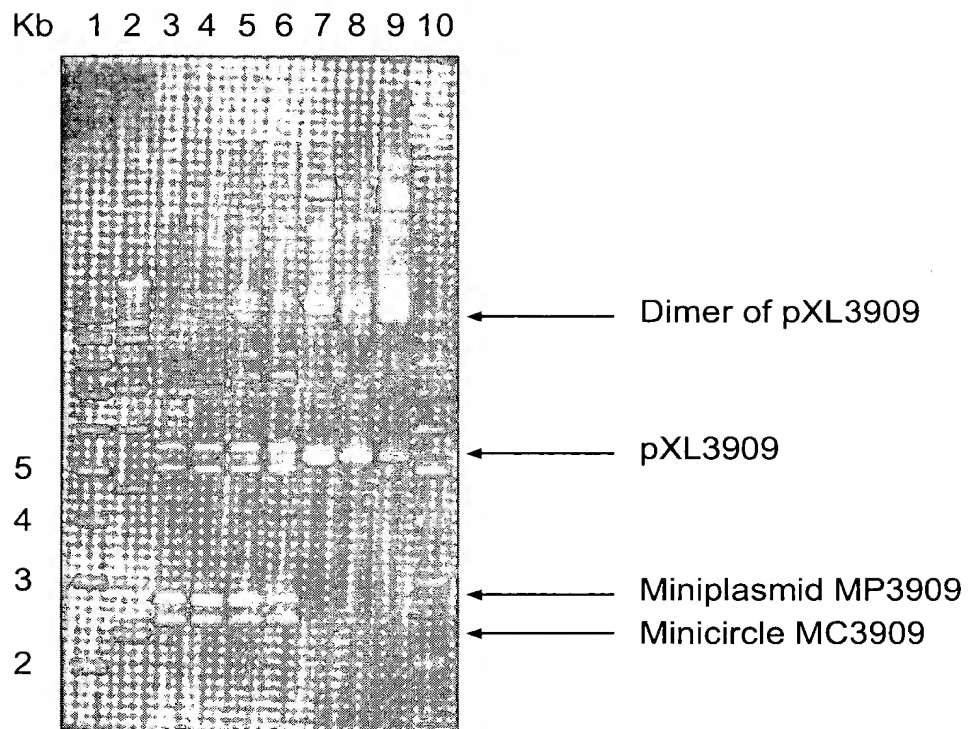
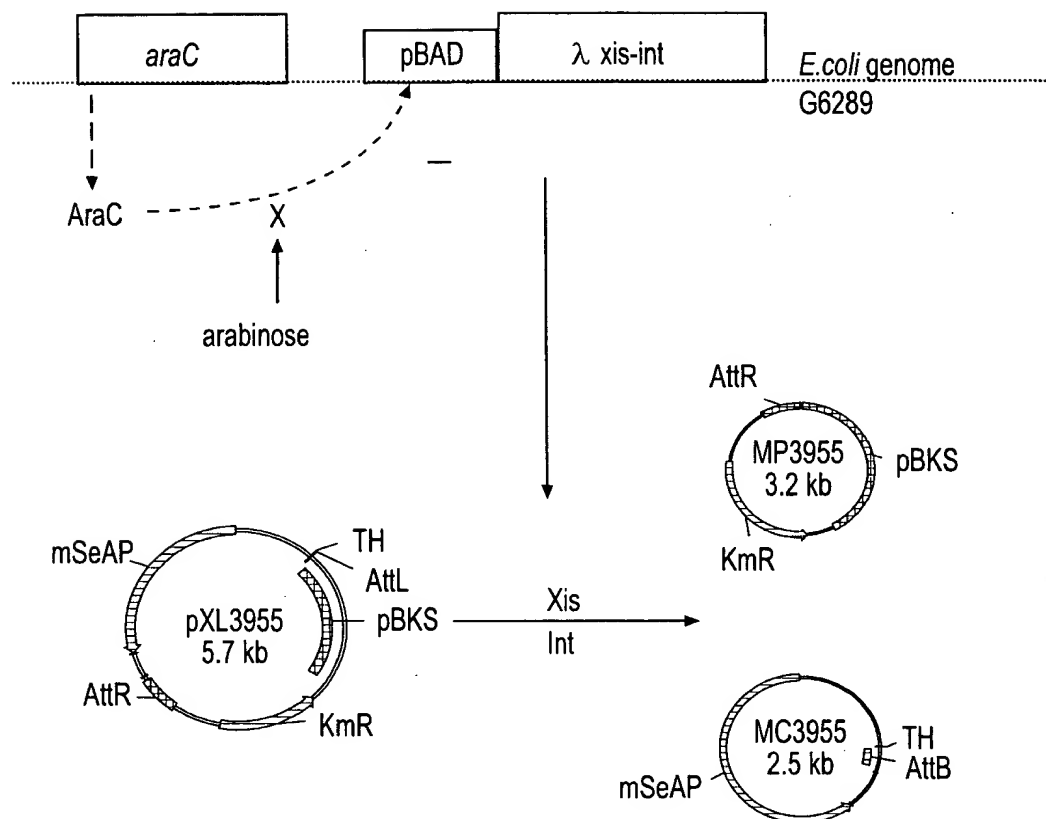


FIG. 21

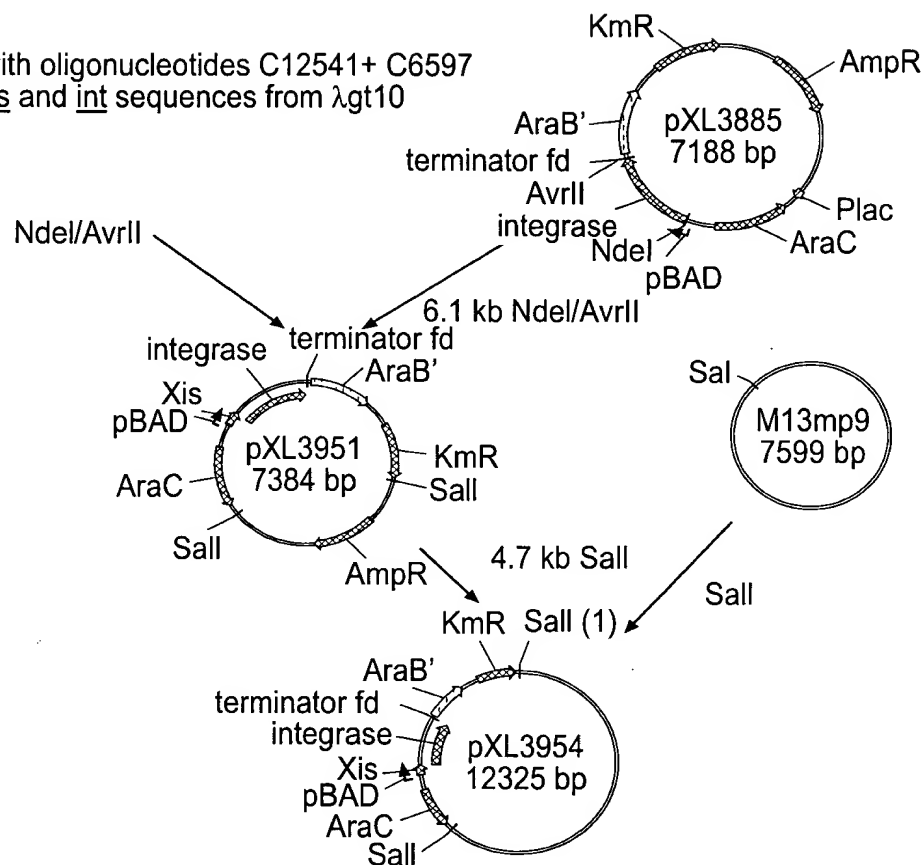


TH & attB (29bp) (SEQ ID NO:13)

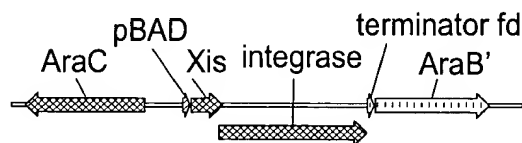
5' -TTCTTTTTTTTCTTGAAGCCTGCTTTTTTATACTAACTTGAGC- 3'
 3' -AAGAAAAAAGAAGCTTCGGACGAAAAAATATGATTGAACTCG- 5'

FIG. 23

PCR with oligonucleotides C12541+ C6597
onto xis and int sequences from λ gt10



Double homologous recombination
in *E. coli* G6264
Soubrier et al.,
Gene Ther. 1999 6 p1482



E. coli G6289

Excisionase & Integrase expressed under control of pBAD

FIG. 24

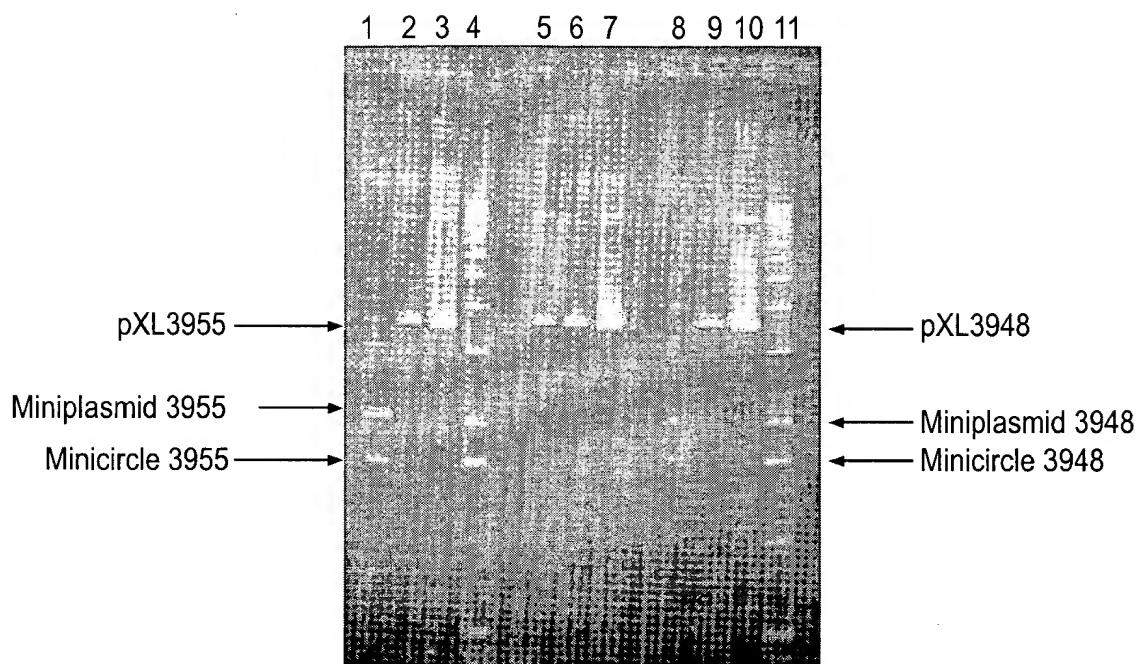


FIG. 25

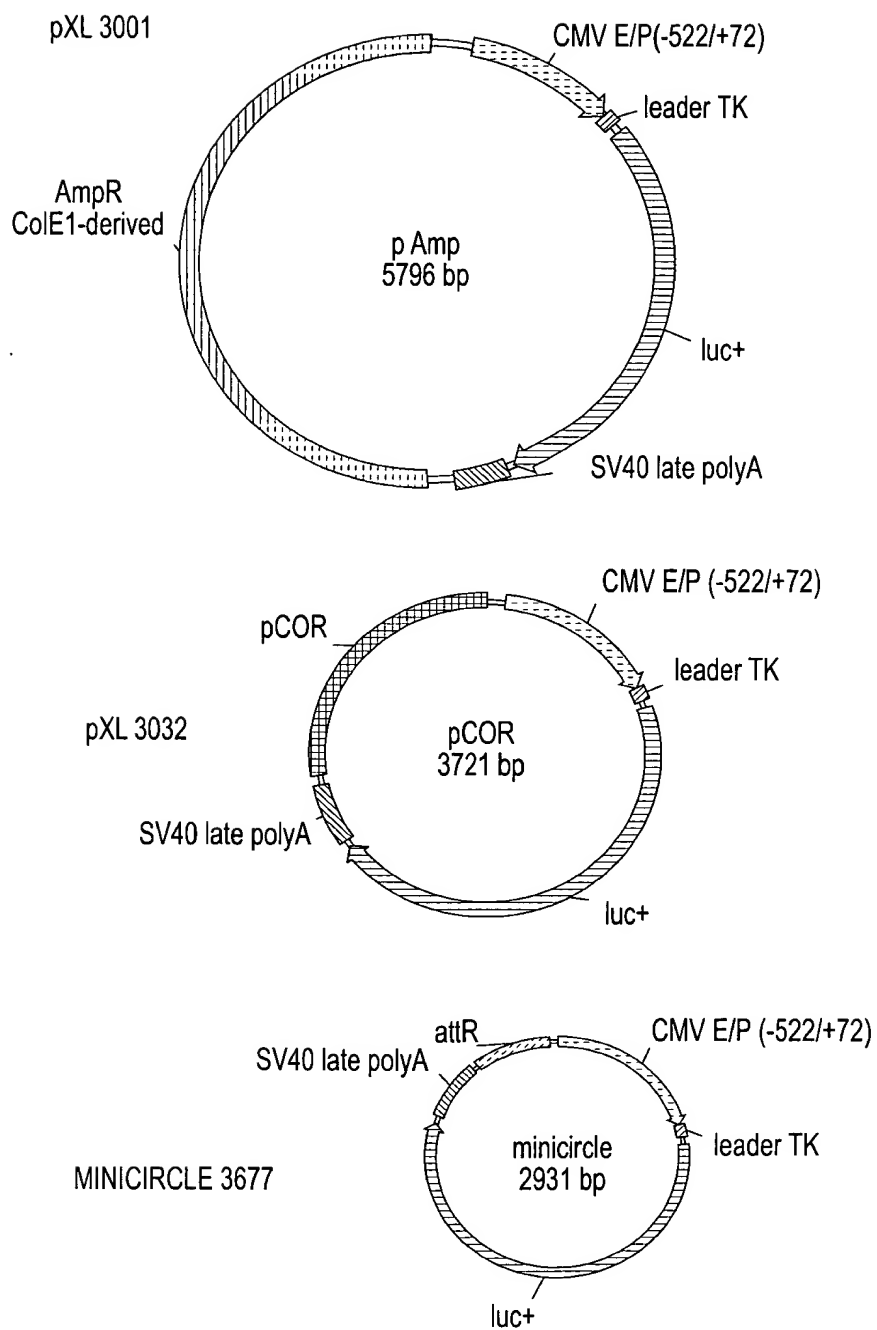


FIG. 26

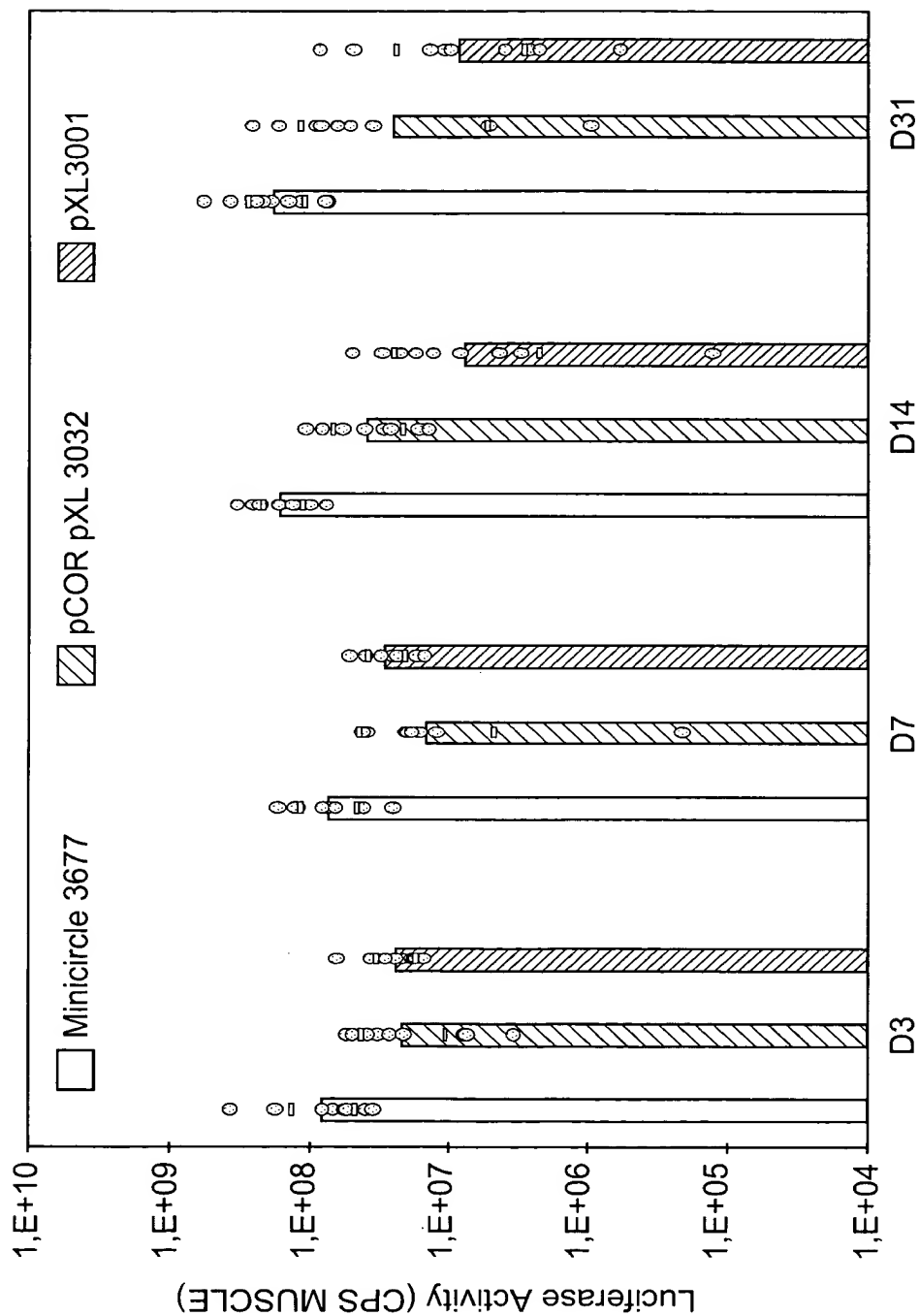


FIG. 27